defence
THERAPEUTICS

Corporate Deck

Biopharmaceutical Innovations for Future Generations

January 2021

Forward Looking Statements

DEFENCE THERAPEUTICS

This presentation contains “forward-looking information” within the meaning of applicable securities laws in Canada, including statements about Defence Therapeutic Inc’s business and corporate strategy, productivity, development and performance, regulatory matters, manufacturing plans and intellectual property plans and the expected development of Defence Therapeutics’ business, trials, products, projects and partnerships.

Particularly, information regarding our expectations of future results, performance, achievements, prospects, opportunities is forward-looking information. In some cases, forward-looking information can be identified by the use of forward-looking terminology such as “may”, “will” ,“expect” ,“intend”, “estimate” ,“anticipate”, “believe”, “continue” ,“plans” or variations of such words. In addition, any statements that refer to expectations, intentions, projections or other characterizations of future events or circumstances contain forward-looking information. For this purpose, any statement that is not a statement of historical fact should be considered forward-looking information. Forward-looking information contained in this presentation is based on our opinions, estimates and assumptions in light of our experience and perception of historical trends, current conditions and expected future developments, as well as other factors that we currently believe are appropriate and reasonable in the circumstances. Despite a careful process to prepare and review the forward-looking information, there can be no assurance that the underlying opinions, estimates and assumptions will prove to be correct. Forward-looking information is also subject to numerous risks and uncertainties, including:

Defence’s short operating history; the possibility that Defence may never receive any product sales revenue or achieve profitability; risks involved in completing the clinical development of, and receiving regulatory approval for product candidates; Although we have attempted to identify important risk factors that could cause actual results to differ materially from those contained in the forward-looking information in this presentation, there may be other risk factors not presently known to us, or that we presently believe are not material, that could also cause actual results or future events to differ materially from those expressed in the forward-looking information in this presentation. There can be no assurance that the forward-looking information in this presentation will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. The forward-looking information contained in this presentation represents our expectations as of the date of this presentation or the date indicated, regardless of the time of delivery of the presentation. Defence’s undertakes no obligation to update the forward looking information in this presentation except as required by applicable law. All of the forward looking information contained in this presentation is expressly qualified by the foregoing cautionary statements.

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Making a Global (Patient) Impact

Defence Therapeutics are Canadian scientific pioneers on a journey to uncover enhanced treatment solutions for future generations through biopharmaceutical innovations.

Leading the way with targeted science, strategic products and bold curiosity, we are uncovering micro and macro level methods for bringing catalytic change to future patients.

Innovative Leadership

LEADERSHIP

Sébastien Plouffe, CEO and Director.
Experienced finance professional and entrepreneur with over 25 years of experience in both capital markets and project development. Worked for more than 10 years as a successful VP Senior Investment Advisor with Canadian brokerages firms BMO Nesbitt Burns and Canaccord Genuity Wealth Management, from which he has accumulated considerable expertise in most aspects of raising and managing capital. Over the last 15 years, Mr. Plouffe was instrumental in the success of various Canadian and International private and public companies in sectors such as biotech, mining and technology.

SCIENCE

Dr. Moutih Rafei, VP Research & Development and Director is an immuno-oncologist and has accumulated profound knowledge and insight in the fields of T-cell development, stem cell biology, cancer immunotherapy and autoimmune diseases. With a PhD in Experimental Medicine at McGill University in the laboratory of Jacques Galipeau, Dr. Rafei is a leader in the development of immune-related therapies for catastrophic illnesses and his research has uncovered many seminal discoveries. Dr Rafei received over 20 awards and recognitions over the last 15 years. His research has resulted in over 20 high impact peer-reviewed publications, 5 reviews, 2 book chapters, 1 monograph, and 5 patents.

FINANCE

Joseph Meagher, CFO & Director (CPA, CA, C.Dir.)
Chartered Professional Accountant (CPA, CA) since 2008, obtaining the Chartered Director (C.Dir.) designation from The Directors College (a joint venture between McMaster University and The Conference Board of Canada) in 2017. Joseph currently serves as the CFO for several publicly listed companies namely Gatling Exploration Inc., Pacton Gold Inc., Bessor Minerals Inc., Kanadario Gold Inc., and Huntsman Exploration Inc. Previous experience includes Staff Accountant and Manager.

Innovative Leadership

SCIENCE

Dr. Jeff Leyton, Head of ADCs & Nuclear Targeted Strategies Developments, Accum Co-Inventor, has a BSc in Biochemistry and a PhD in Molecular and Medical Pharmacology from the University of California. Trained as a postdoctoral fellow in Pharmaceutical Sciences at the University of Toronto he developed novel radiolabeled antibodies as therapeutics against cancer stem cells for acute myeloid leukemia. He also demonstrated for the first time the ability to target and eliminate leukemic stem cells derived from patient samples in mouse models of human leukemia. As a professor, Dr. Leyton has developed a research program to more effectively deliver drugs to the nucleus of tumor cells and is now a leading scientist in the field of nuclear-targeted biopharmaceuticals.

SCIENCE

Dr. Simon Beaudoin, CTSO & Accum Co-Founder, has a MSc and PhD in Biochemistry from the University of Sherbrooke. As co-founder of Defence Technologies, Simons' expertise in biochemistry, and molecular and cellular biology greatly contributed to the conceptualization, realization and valorization of the Accum™ technology platform. With strong expertise in the area of immuno-conjugation and, more particularly, in the development and optimization of antibody-drug conjugates (ADC) for anti-cancer applications, and radio-immuno-conjugates for therapeutic and/or TEP imaging applications, his impressive work has been covered in many highly respected journals. Simon is also the recipient of 15 peer-reviewed awards and scholarships.

Innovative Leadership

SCIENCE

Dr. Raimar Löbenberg, Director and Chairman, Scientific and Regulatory Affairs, holds a Bachelor's of Science degree in Pharmacy from the Johannes Gutenberg-University, Mainz, Germany and a PhD in Pharmaceutics from the Johann Wolfgang Goethe-University, Frankfurt, Germany. He joined the University of Alberta in 2000 where he is the Founder and Director of the Drug Development and Innovation Centre, Faculty of Pharmacy and Pharmaceutical Sciences. Dr. Löbenberg's research interests are in biopharmaceutics to predict the oral performance of drugs and botanicals and inhalable nanoparticles to treat lung diseases such as lung cancer, tuberculosis or leishmaniasis. He is a cofounder of RS Therapeutics Inc., a foam-based topical drug delivery company. Dr. Löbenberg's recent notable positions include: President of the Canadian Society for Pharmaceutical Sciences; Vice Chair and current member of the United States Pharmacopeia Dietary Supplement Expert Committee; current Vice Chair of the Specialty Committee of Traditional Chinese Medicine in Pharmaceutics of the World Foundation of Chinese Medicine Science; and current member of the Health Canada Scientific Advisory Committee on Pharmaceutical Sciences and Clinical Pharmacology and the Scientific Advisory Panel on Opioid Analgesic Abuse.

SCIENCE

Dr. Sarkis Meterissian, Director, is a Professor of Surgery and Oncology (tenured), Director of the Breast Center of the MUHC and Head of the MUHC Breast Tumor Site Group. From 2007-2009 he was President of the Canadian Society of Surgical Oncology and from 2013 to 2015 he was President of Breast Surgery International. He has also served as the Medical Advisory Board Co-Chair of the Quebec Breast Cancer Foundation since 2012. Dr. Meterissian is involved in a number of clinical and basic science research projects related to breast cancer. In 1999, along with Dr. Morag Park (the Director of the Goodman Cancer Center), he set-up the McGill Functional Genomics Group which includes an extensive solid and liquid tissue bank for breast cancer. This Tumor Bank has led to a number of landmark papers including the discovery of the Stromal-derived Protein Predictor (SDPP) published in Nature Medicine in 2008. He presently is involved in clinical research collaborations with the U de M Polytechnique Institute funded by NSERC and translational research projects with Dr. Luke McCaffrey of the Goodman. He is also on the Scientific Committee of the McPeak-Sirois group representing the MUHC. This is a Clinical Trials Research Group bringing together the large cancer centers in the province. As part of this group he has recently set-up a Breast Cancer Metastases Registry supported by major pharma. This registry will include, in a prospective fashion, clinical data on metastatic breast cancers from across the province and their management.

Innovating Pathways to Success

First to develop a combined breakthrough, with precision and efficient cell nucleus drug delivery.

Proprietary and scalable technology targeted at viruses and infectious disease.

Problem-driven solutions confirming strong market potential and upside.

Fully owned assets to be capitalized via global licensing deals.

Exponential scaling potential through partner collaborations.

Proven ability as showcased via flourishing partner pubco's: world-class and award-winning researchers, University level facilities, a leading global health care system and a sophisticated investor community.

Aggressive, accelerated growth model with two innovative and proprietary pathways to market.

TWO PATHWAYS TO SUCCESS:

01 accum™

ACCUM™ TECHNOLOGY

A scalable delivery platform with enormous multiplier effect offering a diversified investment opportunity.

02

VACCINE DEVELOPMENT

Numerous potential applications and indications through use of our catalytic and patented Accum™ Technology.

A Scalable Model

01 accum™

ACCUM™ TECHNOLOGY

100% Owned

- **Primary asset: Clinical research, ADC Platform, ACCUM™ Technology**
- Proprietary platform technology with proven enhanced drug delivery method
- Applications in oncology, vaccine development, and nanotechnologies
- Full ownership of assets and IP
- Pharma & biotech company collaborations
- Supported by Jeff Leyton, Ph.D

02

VACCINE DEVELOPMENT

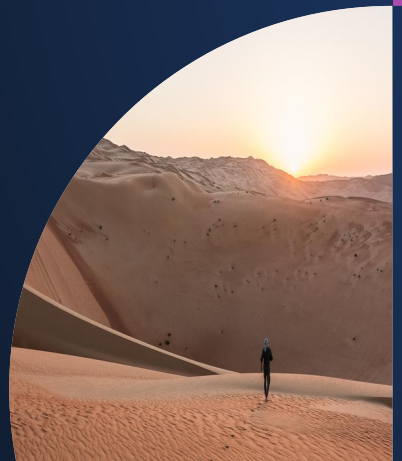
100% Owned

- **Virus Formulations and Product Discovery**
- **ACCUM™** enhanced infectious disease + virus vaccines
- Priority COVID-19 vaccine
- Priority Cancer vaccines
- Full ownership of assets and IP
- Research contract in process with University of Montreal
- Supported by Moutih Rafei, Ph.D

Université de Montréal

Problem Driven Solutions

While human disease therapies are advancing, complex barriers exist with the most recent (ADC - antibody drug conjugates) methods. Defence Therapeutics are showing traction with this problem and with continued innovation show strong ability to unlocking the potential of this complex science.



Ineffective Treatments

- Radiation + chemotherapy can kill tumor cells but also healthy cells.
- Nuclear-targeted biopharmaceuticals struggle with molecular obstacles which has limited their possibility to become a therapeutic standard for human diseases (i.e. cancer).

Next-Level Innovations Needed

- Increasing R&D (investments) in ADC's suggest they are the most likely path to success for enhanced patient treatment options. However, the current limitations require continued innovation.
- Recent study findings are proving a viable and scalable biopharmaceutical solution is within reach.

Platform Technology is the Path Forward

- **ADC challenges are the inspiration for the Accum™ Technology.**
- **With drug delivery abilities at 10x over current ADC's, our Accum™ platform is the perfect partner for current and future drug treatments.**
- With many applications and indications Accum™ is a global solution.
- In combination, these pairings have the potential to become the therapeutic standard for human diseases.

Micro Innovations, Macro Opportunities

The biopharmaceutical space is ripe for innovation and investment to bring major disruption to the treatment of deathly viruses and infectious disease such as COVID-19:

SURGING DEMAND

Increasing elderly population, prevalence of chronic diseases and adoption of biopharmaceuticals globally are impacting demand.

INCREASED INNOVATION

Increasing number of clinical trials showcases the urgent requirement for new patient solutions. Innovative biopharmaceuticals hold the key.

ENHANCED TREATMENTS

ACCUM™ has a proven ability to deliver treatment drugs to diseased cells. Positive outcomes against targeted vaccines points to applications globally.

R&D INVESTMENT MOMENTUM

R&D investments for new platforms, formulations and products offering have the potential for big market impact and with it, returns.

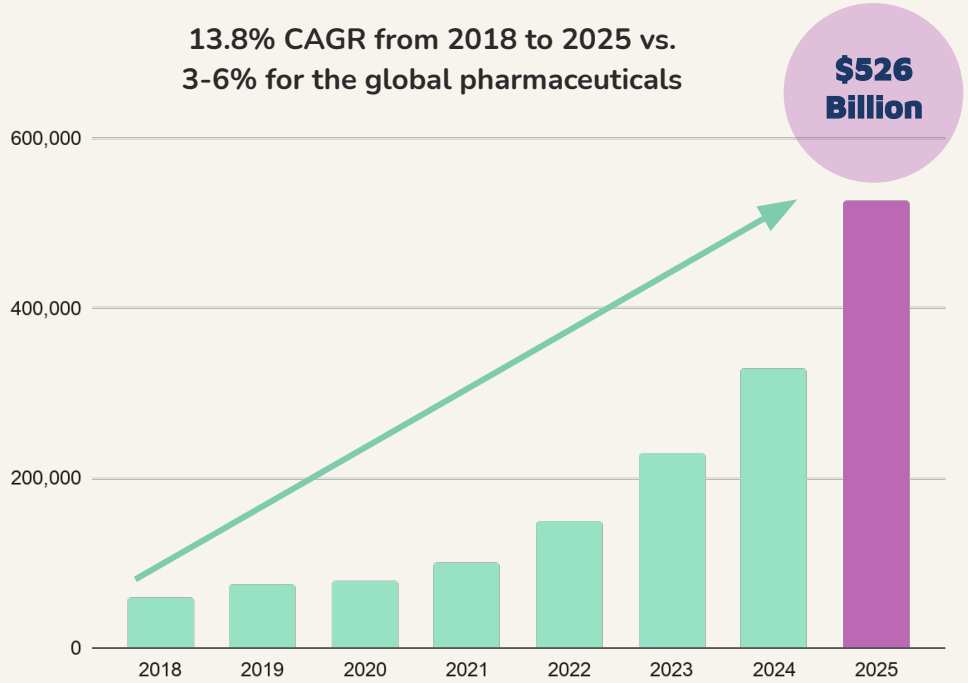
Global Market Pioneers

THE GLOBAL MARKET

At 17% of the global pharmaceutical market, **biopharma is projected to reach $526 Billion by 2025**

This indicates **biopharmaceuticals are destined to dominate** the overall pharmaceutical market in the future.

Vaccines have experienced **364% revenue growth** between 2007 - 2018



Global Biopharmaceuticals Market Projections

ANTIBODIES & ADC DOMINATED SALES

Antibodies and antibody-based agents (e.g. ADCs) dominate biopharmaceutical approvals and sales.

53%

Antibodies were 27% of all biopharmaceutical approvals in 2010-2014 and **have increased to 53%** from 2016-2019.

There are 31 (15.5%) antibodies on the Top 200 selling pharmaceuticals in 2018. **Five of the top 10 best selling drugs are antibodies.**

$

Kadcyla, the ADC for breast cancer that is a standard we measure against Accum- modified ADCs **produced $1 billion in sales in 2018.**

01 Success Pathway

accum™

ACCUM™ Technology provides drug delivery enhancements

Partnering with the academic laboratory of Dr. Jeff Leyton (University of Sherbrooke, Canada), we have tackled an industry-wide ADC challenge - **Nuclear Localization** - using our proprietary technology **Accum™.**

This next-generation platform technology can be leveraged by with other approved ADC drugs, while also driving in-house innovations for proprietary vaccines.

Our process of getting here has involved three steps:

1. We aimed to solve the problem of ineffective drug delivery
2. We successfully targeted the nucleus (through Accum™)
3. To showcase the platform's power, we targeted ADC's and have been successful in delivering drugs to isolated cells.

Accum's precision delivery method has improved intracellular ADC routing with a **10x multiple** over other approved ADC solutions.

Aiming for positive outcomes to possibly address cancer cell resistance issues observed previously in the clinic.

Focused on broadly improving the therapeutic window of current ADCs based on existing technology.

With 100% ownership of findings and outcomes, this platform will fuel all our future treatment discoveries including our prioritized COVID-19 vaccine.

accum™

Technology

Turning ADC challenges into proven platform solutions

ACCUM™ Talk-Worthy Results

Overcoming problematic cell recycling and rejection patterns, ACCUM™ is the first solution to enable ADCs to control intracellular delivery of chemotherapeutic drugs, resulting in superior preclinical anti-tumor activity.

By increasing the tumor targeting specificity - due to increased drug accumulation - non-specific toxicity in healthy cells is greatly reduced.

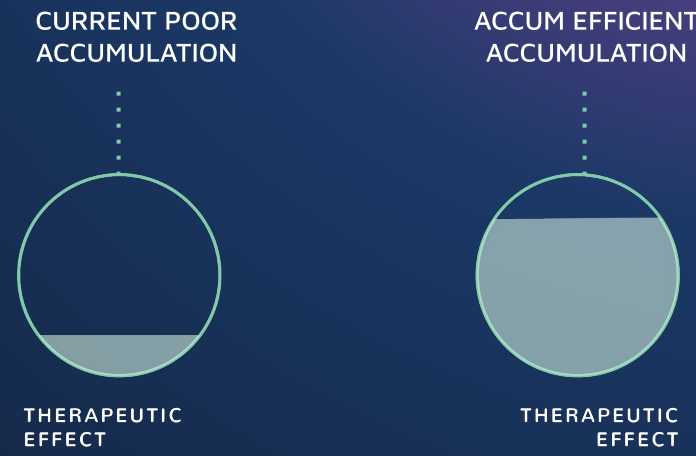
ACCUM™ Innovative Approach

1. Antibody retains tumor cells specificity
2. Accum enables ADC to escape endosome entrapment
3. Accum enables ADCs to be transported to the nucleus
4. The drug is cleaved and release inside the nucleus
5. Nucleus becomes a reservoir for drug
6. The reprogramed delivery system overcomes important resistant mechanisms relevant to ADC effectiveness.

10x

RESULT: We have increased intracellular accumulation of delivered drugs by **10x** compared to current ADCs.

Potential Significance of Accum™ Technology



Current vs. improved therapeutic window

accum™

Highlights & Next Steps

- Completed pilots have proven Accum™ to be very stable, enabling higher drug retention, killing the infectious cell line by **+2000x** over comparable (approved) ADC, “T-DM1”.
- Recent mice trials have proven the ability of Accum™ to improve results.
- Validating Accum™ as a broad ADC platform technology
- Building on these recent preclinical results, Dr. Jeffrey Leyton is also leading two additional discovery efforts :
    - Develop single indication Accum™ modified ADC’s for cancers with unmet needs.
    - Developing Accum™ to enable antibodies to drug ‘undruggable’ targets

POTENTIAL MARKET IMPACT

With positive results, conjugation of Accum could be an important strategy to address cancer cell resistance issues observed in clinical studies.

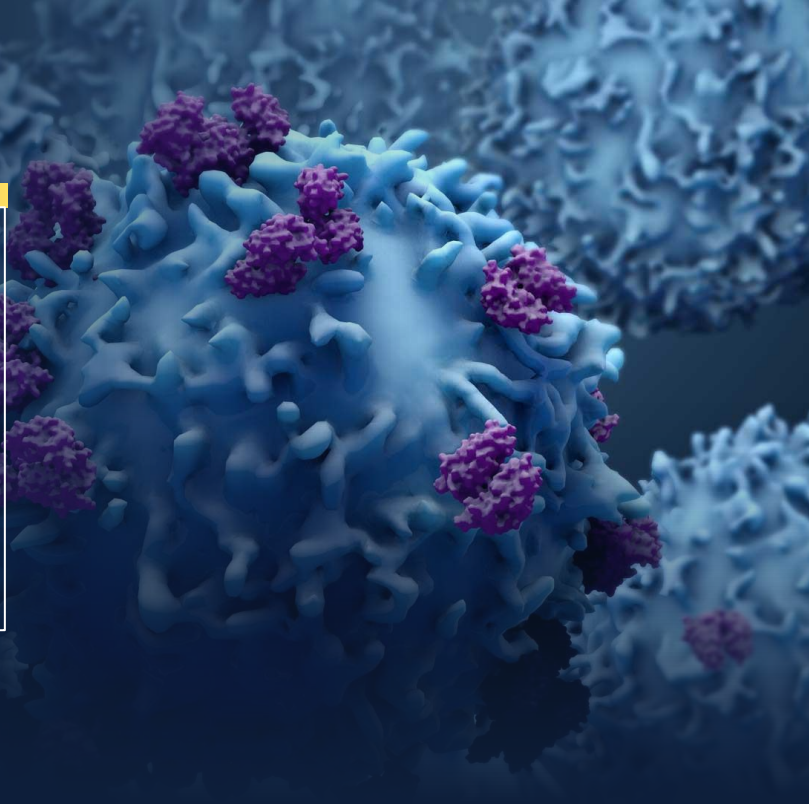
For timelines see Product Pipeline page.

02

Success Pathway

Accelerated Vaccine Development: COVID-19 + Cancer

Partnering with the academic laboratory of Dr. Moutih Rafei of University of Montreal (Canada), Defence Therapeutics is focused on infectious disease and virus vaccine development utilizing the ACCUM™ platform for targeted drug delivery and effective treatments.



State of the Art Facilities

University of Montreal laboratory space of 140 m2, accommodating 12 highly qualified personnel and a wide range of equipment.

Access in process to 12 high tech platforms located at the Institute for Research in Immunology and Cancer as well as the biopharma platforms at the faculty of pharmacy.

Université de Montréal

100x

More potent than actual antigen (due to Accum™)

Platform-driven targeting results in vaccine solutions applicable to any virus or infectious disease.

Possible Accum™ driven cost reduction of vaccine or ADC delivered – less drugs with better efficiency and efficacy.

Potential for less toxicity and rejection, for increased body tolerance.

Entirely scalable vaccine development approach - not limited to one indication:

Priority #1:
COVID-19 vaccine development

Priority #2:
Cancer vaccine, especially those with unmet medical needs.

Strong ability to produce follow-on products.

Overcomes major issue to date of non-targeted therapies.

accum™

Advanced Vaccines

Benefiting from the multiplier ability of Accum™ (100x), Defence Therapeutics can easily direct the science from one antigen to another resulting in rapid new formulations for any pandemic or disease: Covid 19, Cancer, Ebola, etc.

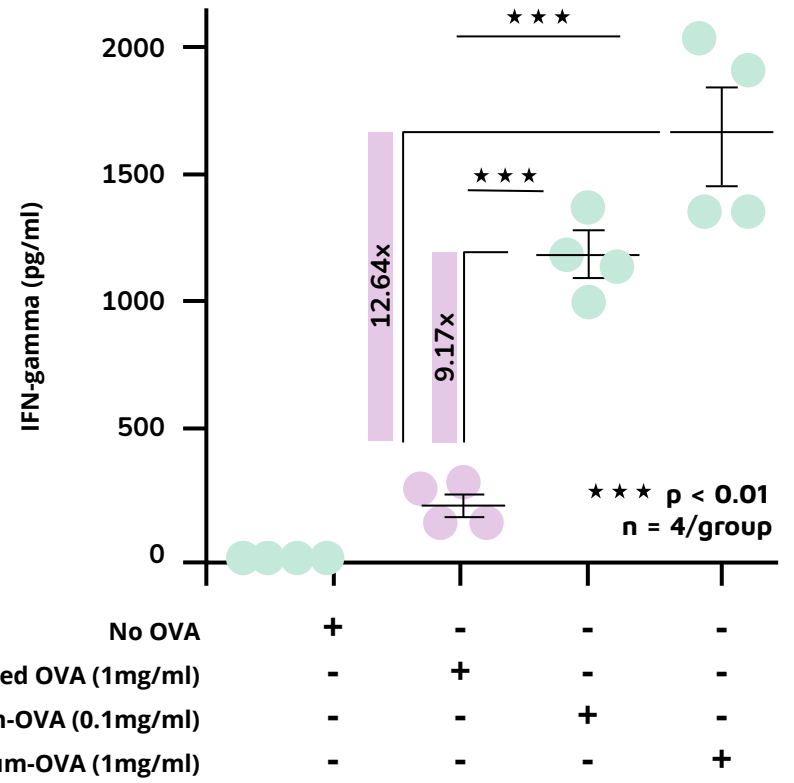
- Accum™ technology enhances the delivery of protein/RNA/DNA inside the cytoplasm
- It targets previously identified antigens and optimizes presentation and drug response
- The platform allows for re-application of formulations to the latest viruses, for targeted efficiency and positive patient response.

Experiments Underway

Lab test underway

See Product Pipeline for full details.

QUANTIFICATION FOR IFN-GAMMA PRODUCTION BY RESPONDING T CELLS (IN VITRO ANTIGEN-PRESENTING ASSAY)



0.1 mg/ml of Accum-OVA leads to ~9 fold higher response compared to 1mg/ml of naked OVA (eg ~100x higher potency)

Comparables

Immunomedics

Leader in next-generation antibody-drug conjugate (ADC) technology,

$21bn

Gilead acquisition, effective Oct. 2020

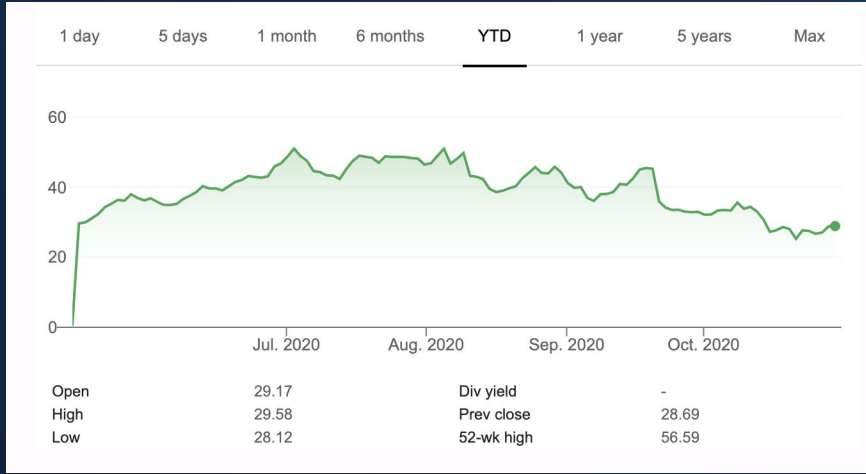
$979.5m

Assets as of Aug. 2020

ADC Therapeutics Sa
NYSE: ADCT

29.00 USD
+0.31 (1.08%)

OCT. 29 2020



BioNTech SE - ADR
NASDAQ: BNTX

84.81 USD
+7.27 (9.38%)

OCT. 29 2020

Mersana Therapeutics Inc
NASDAQ: MRSN

17.88 USD
+0.31 (1.76%)

OCT. 29 2020

Pipeline

Key Milestones

accum™

2020	2021			2022		
Q4	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**
Demonstrate Accum™ technology-driven enhancement of three approved ADCs:		**Showcase improved tumor killing by applying Accum™ ADCs to murine models of human cancers.**				

DELIVERABLES

- Stable conjugation of Accum on approved ADCs
- Evaluate for cytotoxicity compared to non-Accum ADC's.
- Determine cellular accumulation levels inside Accum™ ADC tumor cells
- Determine pharmacokinetics (PK), ADC distribution and anti-tumor killing efficacy

Target outcomes

Accum™ stabilizes ADCs with no occurring off-target problems

Increased accumulation equates with increased tumor killing

Accum enhances tumor killing relative to traditional approved ADCs.

VACCINE DEVELOPMENT

2020		2021	
Q4		**Q1**	**Q2**
Lab test underway	**Two-part in vivo (animal) tests**	**Lead compound ready** (with positive test results)	

DELIVERABLES

- **Proactive Testing:** Prophylactic vaccination (immunise + challenge)
- **Reactive Testing:** Therapeutic vaccination (treat existing disease + then reviewing results)

Target outcomes

Phase 1 Health Canada trial candidacy

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